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*On some Human Remains from Cowley, near Cheltenham.* By  
J. HUTCHINSON, Esq.

24, Pall Mall, 7th Dec., 1864.

DEAR SIR,—At the suggestion of Dr. Bird of Cheltenham, I beg to send you a box containing some skeleton remains which were found at Cowley, about six miles from Cheltenham, where I am forming some ponds. They were found, the remains of three together, lying north and south, and not a vestige of anything in the shape of a nail or metal near the spot. Since these were discovered, the remains of other three skeletons have been found, but so decomposed that there was nothing worth preserving. The place where I am making the waters is traditionally called the Holywell; but why, none of the old people know, it having gone by that name in their forefathers' time. It lies at the bottom of a wood, and the bones were found from two and a half to three feet from the earth's surface. Dr. Bird thinks they are the remains of the Ancient Britons.

I am, yours very faithfully,

C. Carter Blake, Esq.

J. HUTCHINSON.

MR. CARTER BLAKE said the measurement of one of the skulls corresponded with those found in the long barrows in Wiltshire. The other was much shorter. The forehead in both was very high, and in the former there was great compression in the parietal bones, which form, he considered, had been produced by pressure sideways. The skull had probably, however, been originally a dolichocephalic one. One of the tibiae was "sabre-shaped", like those of the human remains found at Gibraltar; that character, however, was not very rare. One of the bones exhibited marks of erosive action that might be supposed to have been produced by the cutting of a flint implement; but if the marks be compared with those made by rats, nothing could be inferred from them than that they were caused by rodent action.

MR. D. W. NASH stated he knew Cowley very well. It lies on a low bottom, and is often flooded, and he never saw a vestige there of a barrow or tumulus, though there are many on the neighbouring hills. There was nothing, indeed, about Cowley to indicate antiquity, and he felt convinced that there was no evidence in the human remains found there to warrant the supposition that they belonged to the ancient Britons.

The following paper was then read:—

*Notes on the Physical and Psychological Condition of the Inhabitants of Viti, Tonga, and Samoa.* By WILLIAM T. PRITCHARD, F.R.G.S., F.A.S.L.

THE progress of the natives, though undoubtedly great and wonderful for the length of time they have been under the influences of civilisation, is as yet comparatively so limited that the closest and most continuous observations and comparisons are required to mark the results in physical and psychological investigations. Nevertheless, whilst ever keeping before me the proposition that physical pecu-

liarities and mental developments undergo changes only in the ratio of the progress of cultivation,—a proposition which narrows the field of observation within very circumscribed limits,—I have been able by assiduous observations and minute comparisons to detect and to trace certain changes in the physical peculiarities and mental developments of these islanders, which may be interesting to those who devote their time and energies to the elucidation of questions pertaining to the human races.

The people amongst whom my observations and comparisons have been made are the Papuans inhabiting the Fiji group, and the Malay-Polynesians inhabiting the Tonga and Samoa groups, and the Atoll grouplets and detached islets scattered between the equator and the southern tropic, and longitude east 175 degrees and west 150 degrees. At the same time, the intercourse I have had with the Polynesians of the Pacific generally, leads me to believe my remarks apply to them all, since the same influences, conditions, and contingencies are found to prevail in all the groups and islands in a greater or less degree.

In the normal state of the inhabitants of the region I have defined, physical and psychical influences, in the proportion of their respective force, combined to generate and to preserve a certain standard of intellectual capacity and physical development. The greater or less force with which these influences were brought to bear upon individuals resulted in the creation of classes—the chiefs, the priests, and the commoners.

The chiefs are finer looking men than the commoners. Intellectually and physically they are superior. The contour of their features is more striking, more definite—the skull altogether larger. This superiority is attributed by superficial observers to the supposed fact that the chiefs do not work, and to the partial fact that they feed better and more regularly than the commoners. It happens, however, that the chiefs *do work*, and that the contributions of food are contingent upon their active participation in the labours of their tribes; and that food, though first formally presented to the chiefs, is by them subsequently shared with the people, from policy as well as in compliance with custom. Custom requires the chiefs to work more or less with their people; and the object of the custom is, by taking the lead in every work, to stimulate exertion. Custom requires the heads of families to take a prominent lead in every work in which a family is concerned. In tribal affairs the chiefs take the lead, as the heads of the people; in family affairs, the chiefs take the lead, as heads of their families. And as a chief takes the active lead in all tribal affairs, and willingly shares the labours of his family, so is he popular, so is he supplied with food. Ancient custom has assigned the duty of supplying the chiefs with food, in Samoa to the Tulafale, in Tonga to the Matabule, in Fiji to the Matanivanua, the landholders, and as such the heads of families in each group respectively. But custom has also ruled that an inactive, indolent chief, who holds back from putting his hand to all that the tribe undertakes, has but little food carried to him by the landholders. And a subordinate, or a near relative (usually a brother or nephew), whose willing activity

and prominent skill attract attention, becomes the *actual* leader and chief, and as such receives the contributions of food. At the same time, however, in obedience to that traditional reverence for the persons of their hereditary chiefs, which is inherent in all the islanders of the Pacific, the inactive, indolent chief may still be allowed to retain the official name and title,\* divested of the attributes. Thus, then, while ancient custom has ordained contributions of food for the chiefs, the actual supply is contingent upon and is regulated by the active, prominent participation of the chiefs in the workings of the tribes.

The true cause of the intellectual and physical superiority of the chiefs is in the fact, that as leaders, their mental faculties are more continuously active than those of the commoners. For it is their province first to conceive, then to plan the execution, then to effect the realisation of all the workings of their respective tribes. In other words, the chiefs are the sources and centres of thought and of action in their given spheres. The result of this continuous mental activity is a higher intellectual development; and the physical character corresponds to the intellectual condition, according to the proposition of Prichard.

The priests are physically inferior to the chiefs; intellectually they are compeers. And I think the skulls of the priests, as a class, will be found even larger than the skulls of the chiefs. The few I examined and compared in Fiji were certainly larger than any of their race. The priests have not the active bodily habits of the chiefs to develop their sinews and muscles; but to develop their heads, their cranial capacity, they have as much, perhaps more, mental employment. They are continuously occupied in the conception and development of new schemes and tricks to gull the people. It is the object of their lives to override the intellect of the people, and to harmonise their priestly enunciations and denunciations with the designs, the intrigues, the ambition of the chiefs, in order to maintain their priestly supremacy. The priests and the chiefs designedly work into each others' hands to support each others' position and power. The supremacy of the chief is the supremacy of the priest, and the supremacy of the priest is the supremacy of the chief. And this, though, perhaps, developing only what appear crude absurdities when measured by our standards of intellect and civilisation, requires positive continuous mental activity, in fact, *a degree of mental culture*, with its consequent psychical influences. And the result of these psychical influences is the enlarged cranial capacity of the priests. I have heard the complaint by missionaries in Fiji, that the priests are the most stupid of the natives; that they evince less capacity for mental improvement and external civilisation than any others of their countrymen; that they are the last to learn, and the dullest to appreciate the beneficent teachings of Christianity and the social enjoyments of civilisation. That they *are* the last to embrace

\* It is a peculiarity of chieftainship in the islands of the Pacific, that the official name and title never die; reminding one of our maxim "the king never dies".

Christianity, and to follow in the track of civilisation is quite true. But this is *not* because they possess less intellectual capacity than their countrymen. On the contrary, it is just because they possess *more*. They possess the intellectual capacity at once to apprehend the aggressive nature of the teachings of Christianity and of the ethics of civilisation, as well as the beneficent social results which attract the burdened and priest-ridden commoners. They are quick to foresee that inevitably their power must wane, that inevitably they must fall from their commanding supremacy, as the new influences and associations introduced by Christianity and civilisation advance. And they are slow to commit the suicidal act. This is the true secret of their apparently dogged perversity and blank obtuseness.

The proposition of Courtet de l'Isle, "that the capacity for civilisation and the intellectuality of races corresponds with their physical *beauty*," is not maintained in the case of the islanders under consideration. The Samoans and Tongans (Malay-Polynesians) possess greater physical beauty than the Fijians (Papuan). But the Samoans and Tongans do not possess a corresponding greater capacity for civilisation, nor have they more intellectuality than the Fijians. If there is a difference it is in favour of the less comely Fijians. The Samoans and Tongans are physically well made, handsome people. In physical beauty, so far as well rounded limbs and symmetrical, fully developed figures, conform to physical beauty, they are unsurpassed in all the Pacific, or perhaps anywhere else. Yet they did not, in the respective conditions of the two races anterior to the appearance of the white race, possess as many native arts, or as great manufacturing skill, or as keen an ingenuity, as the Fijians. The Samoans and Tongans knew nothing of the manufacture of pottery, nor did they display the appreciating knowledge of commercial economy which in Fiji assigned the manufacture of certain articles to districts best adapted to their production, and whence arose an inter-tribal commerce, one district bartering their special productions, according to their wants, with another. Nor do the Samoans and Tongans even now evince a readier susceptibility to instruction and civilisation than the Fijians. In one aspect, indeed, the Fijians are decidedly before their neighbours. For they offer the better prospect of realising a local supply of labour for the requirements of civilisation, not merely because they are more numerous, and are located on more available islands, but because, already prepared by their inter-tribal commerce and competition, they can more readily understand and appreciate the equity of the principle of *quid pro quo*. And as they become successful labourers in the service of civilised employers and capitalists, their progress in civilisation will unquestionably outpace that of their more comely but less commercial, and therefore less industrious neighbours.

There is a certain physical resemblance pervading the inhabitants of the Atoll or Lagoon islands, and a certain physical resemblance pervading the inhabitants of the larger and mountainous islands, which distinguishes the one from the other. In other words, coincident with certain distinct but defined local exterior influences, are

found certain distinct but defined local physical peculiarities, which peculiarities distinguish from each other, as they are subject to those influences, people who are indubitably proved by the evidence of physical affinities, oneness of language, and similarity of traditions, to belong to the same race. As an illustration, compare the natives of Ellice's group, or of the Union group, both Atoll islands, with their neighbours of Samoa, a mountainous group. At once the inhabitants of the low reef islands are distinguished from the inhabitants of high, mountainous islands. In the Atoll islands the natives live wholly on fish and cocoa nuts. Having no mountains from which the moist land breeze of the night sweeps down to the coast, they are exposed only to winds which cross the ocean. Having no extent of country to roam, their bodily exercise is limited to the conduct of their canoes and the practice of fishing within the circumscribed bounds of their reefs. Separated into small detached communities, they have but few incentives to competition, but few sources of rivalry. In the larger and mountainous islands the natives have a greater variety and choice of food, both as to quality and quantity. They are exposed to the damp of the nightly dews, and to the cold of the moist land-breeze which the mountains never fail to send down the valleys to the lowlands and to the coasts after every hot, sultry day. They have mountains, hills, and dales to roam, and long coast-lines to traverse by land or by water. And with this modification of climate, this difference in the mode of life and diet is found a corresponding difference in the physical development of people of the same race. Do these relative influences effect the difference? Do they act singly and independently, or equally and in combination? Without professing to solve these points, I merely record the ultimate fact,—that the existence of these influences, in their relative force, is coincident with certain differences, in their relative degrees, in the physical development of people of the same race; and that the degree of difference is always commensurate with the degree of external resemblance pervading and assimilating the inhabitants respectively of each class of islands.

Natives born since the introduction of Christianity, and reared under the immediate influence of the teachings of the missionaries and of the incipient civilisation which has resulted from intercourse with traders, have more fully developed foreheads and cranial capacity than the natives born and reared under the old influences and associations. Let two natives be placed together, the one born and brought up under the new associations and influences which have accompanied Christianity and civilisation; the other born and brought up under the old associations and influences; the difference in *physical aspect* is at once evident. Take a Samoan born under the improved associations and influences, educated at the missionary institution at Malua, where mental development is facilitated by withdrawing the pupils from the old associations and influences, and domiciling them within the precincts of the college grounds, where their energies are further stimulated by competition and contact with each other. Compare his skull with the skull of a Samoan born, and

reared under the old associations and influences; an incipient difference in the form of the cranium is just perceptible. The cranial capacity of the former is just appreciably greater than that of the latter. Accepting the skull of the latter as showing the true prevailing form in the uncultivated condition, or rather and more precisely, in the condition of mental culture and intellectual development corresponding to the condition of the race anterior to the introduction of civilization and its influences; the incipient enlargement of the cranial capacity perceptible in the other skull seems to corroborate "the view taken by Müller and Engel that the shape of the skull is everywhere essentially dependent on mental culture, and *changes with it*." (Collingwood's Waitz; *Introduction to Anthropology*, page 79.) The crania of the *children* of the natives born and reared under the improved moral and intellectual condition, when these children (the second generation under the new development) are themselves under the direct and immediate force of the new associations and influences, especially in the missionary connections, show a yet more appreciable improvement of capacity, than the crania of their parents. In the next (*the third generation*) the metamorphosis will, I think, be positive, definite, and unquestionable.

Take a group of natives born and reared under the old associations and influences, and a group of natives born and reared under the *immediate force* of the associations and influences introduced by civilisation and systematic mental culture. A close comparison and a minute observation show that the mouth is somewhat smaller, the lips somewhat thinner, the head somewhat larger in the latter than in the former; the outline of the features and the physical aspect generally are improved. An air of intellectuality, the direct result of and in immediate connection with systematic mental culture, forces itself upon one's notice, when carefully studying the comparison. In making these comparisons, however, it is necessary to afford adequate allowance for the native practice of squeezing the heads of infants into a certain shape, a shape in conformity with their ideal of beauty.

As illustrative of the palpable susceptibility of these islanders, especially the Fijians, to the influences immediately and continuously bearing upon them, the fact may be noted that the natives trained by the missionaries for teachers and assistants receive so perfectly the impress of the peculiarities of the individual missionary under whom they have been taught, that it is easy to designate the instructor when the pupil is seen and heard in the pulpit. To know a missionary is to know the native teachers whom he has brought forward. The native affects and appropriates the delivery, the intonation, the gesture, the vehemence, the platitudes, the bearing, the gait, the whole manner and individuality of his missionary preceptor. The pupils take the mould of the instructors so precisely, that the type of their intellectual performances and physical action become almost completely assimilated. In Fiji this assimilation is perhaps more obvious than amongst their neighbours; occasionally it verges on the ludicrous, though it is always amusing.

The offspring of natives of different groups are more active, and

daring, and hardy than the offspring of natives of any one given group. Tongo-Fijians, or Tongo-Samoans, or Samoan-Fijians are respectively more active, more daring, more hardy than the pure Tongan, or the pure Samoan, or the pure Fijian. Wherever in any one group there has been an intermixture with natives of either of the other groups, the people are in every way physically and intellectually superior to the people of the districts of the same group where there has been no intermixture. In the eastern districts of Fiji there has been a large intermixture with the Tongans, an intermixture dating many generations back. In the western districts the intermixture has been so limited that it is hardly traceable; and the natives are in every way physically and intellectually inferior to their countrymen of the eastern districts. Leaving the coasts and forcing our way into the interior of Viti Levu, the coincidence is found that the people are inferior, physically and intellectually, to those of the coasts, and that there has been no intermixture with any of the neighbouring islanders, and scarce any with their countrymen of the coasts. These inland people compare unfavourably even with the natives of the western coasts, where the intermixture with exterior islanders has been on the most limited scale. As we advance from the eastern districts to the western districts, and thence to the interior, the features appear more ungainly, the foreheads more compressed, the occiput more developed. In other words, as we proceed from the large commixture of two groups, to the limited commixture, and thence where there is no commixture; or as we advance from the sea coast to the interior, a marked depression, physically and intellectually, is observed.

The general superiority of the inhabitants of the coasts is so well known throughout all the groups, that it is considered a reproach and an insult to be called an *inland native*. In Fiji the readiest and most emphatic form of expressing one's supreme contempt for another, and of disparaging his skill and prowess, is to apply the term "kai-vanua." So in Samoa, the pithiest epithet for an ill-mannered contemptible person is "uta-fanua."\*

Making due allowance for the relative numbers of the populations (in Fiji 250,000, in Samoa and Tonga 43,000), there has been amongst the natives of the coasts of Fiji a larger importation and intermixture with natives of other groups than is found in any other single group.

Throughout the groups, white men have settled and married native women; and the progeny of this fusion of races,—locally called half-castes,—affords an interesting study.

The introduction of a foreign element has contributed to improve, or rather to modify, the original physical type—an improvement or modification which is discernible more or less clearly in different individuals according to the degree of resistance they possess to the collateral influences which surround them. These collateral influences are for the most part antagonistic to the full development of the

\* Both these terms may be rendered a "native of the interior", and imply a lack of familiarity with the sea.



foreign element, because the offspring are born in the country of their mothers, where the circumstances and associations pertaining to the maternal element naturally predominate. The degree of improvement or modification is obvious just in the proportion that the subject has been from infancy in the society and under the influence of the father's race. The development is very clearly discernible in those half-castes whose parents have been domiciled with the paternal race in the white men's settlements and away from the immediate associations and continuous influences of the mother's tribe. The development is yet more obvious in those half-castes whose birth is subsequent to, and farthest removed from, the date of the withdrawal of the mother from her tribe and her submission to the superior influences of the paternal race, or the removal of the mother with the father into one of the contiguous groups where the mother has no relations, and where, therefore, the influences pertaining to the paternal race have the most decided force,—from the fact that the immediate daily associations emanate from, and rally round, the father as the sole head and stay of the family. In other words, the *paternal* type prevails over the *maternal* in proportion to the *activity and force of the influences* pertaining to the paternal race. In the *same* family, I have observed different degrees of improvement or modification of physical type. And I invariably found that the subject of the fullest development of the improvement was born and reared in circumstances in which the influences peculiar to the paternal race were permanently predominant, and the subject shewing the least degree of improvement was born and reared in circumstances in which the influences peculiar to the maternal race were permanently ascendant. Instances have come under my notice of an improvement in the contour of the features resulting, after the offspring—born, and in early childhood domiciled, among the mother's tribe—have been removed into circumstances where they were almost wholly in the society of whites and half-castes, and free from the immediate associations and influences of the maternal race.

The half-castes, as a class, are robust, hardy, and active—their intellectual capacities superior to those of their mothers and equal to those of their fathers. The offspring of white fathers and Papuan mothers (Fijians) excel the offspring of white fathers and Polynesian-Malay mothers (Samoans and Tongans), in *physical* hardihood and courage, while in *mental* capacity and development they are equal. There are peculiar influences which operate with unequal force and with distinctive results upon each of the maternal races in their native state; and these distinctive results are transmitted from mother to child just in the proportion of their development in the maternal races. The Fiji-Papuans are subject, from the very nature of the surrounding circumstances and associations, to influences which generate physical hardihood and courage—which circumstances and associations, with the concomitant influences, are absent among the Polynesian Malays. While both races are under the influence of customs and rites peculiar to the savage and barbarous state, while many of their customs and rites are similar, nay, even borrowed from

each other (the groups being so closely contiguous), local circumstances, arising from the distinctive character of the respective groups, so modify the local observance of these customs and rites, that the nature and the force of the influences evolving therefrom are different and unequal, and of course, therefore, produce different results, unequal degrees of development, in each respective locality. The Papuans of Fiji are born under rites and customs which, in their nature exacting and severe, in their observance impel to unremitting watchfulness and ceaseless exertion. This unremitting watchfulness and this ceaseless exertion beget physical activity, and this in turn begets physical hardihood and courage. The Polynesian Malays of Samoa and Tonga are born under rites and customs which, in their nature less exacting and severe, in their observance are less impulsive to unremitting watchfulness and ceaseless exertion. Hence there is less physical activity. And hence there is less physical hardihood and courage. Yet the rites and customs of both races, while unequally exacting and severe (the result of local circumstances and associations), are alike complex and multifarious, and are alike transmitted by oral tradition. Hence the influences which mould their *minds* and give compass to their intellectual capacity, are equal. Thus, then, while there are peculiar influences which operate with unequal force, and with distinctive results, upon the physical development of the two races, there are peculiar influences which operate with equal force, and with corresponding results, upon the mental development—especially exercising the faculty of memory. And these distinctive physical results, together with these assimilated psychical results, relatively descend to their offspring when women of either race become wives of white men, the ultimate general development being modified, however, as the force of current exterior influences encourages the paternal or the maternal type to prevail.

The children of half-caste women by white men are robust, hardy, active, and partake fully of the attributes of the paternal race. The characteristics of the paternal race appear more fully developed, and the characteristics of the maternal race more positively diminished than the degree of the intermixture would, by proportion, lead one to expect. That is to say, the *degree of development* of the paternal race preponderates over the *degree of infusion* of the paternal race. The maternal physical characteristics are stronger and more tenacious in the progeny of the Papuans of Fiji than in the progeny of the Polynesian Malays of Samoa and Tonga. The rough, harsh skin of the former, and the persistently frizzled, almost wiry hair, are more distinctly retained in every degree of infusion than the smooth soft skin, and the seldom wavy, generally straight, hair of the latter.

When half-castes intermarry, they are less prolific than when they marry into either of the parent stock. In the one alliance there is fruitfulness, in the other prolificacy. And I am inclined to think that they are more prolific when they marry into the paternal stock than when they marry into the maternal stock. That the half-caste women are as prolific as any other women, when married into the paternal stock, the rapidly multiplying progeny proves indubitably.

But when they marry into the maternal stock, they invariably desert their husbands before they have afforded the proper data for precise comparisons, from which to deduce positive conclusions. I know of *only two* instances in the three groups where separation has not quickly followed these marriages into the maternal stock. The most satisfactory instance is in Tonga, where the daughter of an Englishman by a Tongan woman has married a young Tongan chief, with whom she still lives, but without any notable fecundity. The other instance is in Fiji, where the daughter of an Englishman by a Fijian woman, has for many years been the wife of a Fijian chief. There is but one son living, and he can only be distinguished at first view from a pure Fijian by the circumstance that his hair is less frizzly and wiry. In every other respect, he presents, at first glance, no trace of the paternal white type. It is only the very closest examination that shews his skin is somewhat less harsh and rough than the pure Fijian. It should be observed, however, that it is impossible to know the actual result of the alliance in this instance; for it cannot be told to what precise extent the Fijian custom of destroying children before birth has been practised. It is perilous to evince, even in honest research, too much curiosity or interest in the family affairs of a Fijian chief.

The offspring of half-caste intermarriages are not as robust and active as their immediate parents. Many of them are better looking, that is, they develope more of the white features and contour than of the native. But they are physically less hardy than their parents; they are even difficult to rear. The colour of the skin is a shade lighter than that of their parents.

The skin of the Samoan and Tongan (Polynesian Malay) half-castes is softer and smoother than that of the Fijian (Papuan) half-castes. The characteristics of the Fijian skin seem regularly transmitted to all the half-castes of Fiji, while the hair seems sportively to partake sometimes of the one type, sometimes of the other.

The half-caste offspring of the Samoan women are better looking than those of the Tongan women, and the latter better looking than those of the Fijian women. There is a difference in their physical beauty—a difference which I trace to the greater importation of the Fijian element among the Tongans than among the Samoans. For it is the rough, harsh skin of the Fijian that chiefly marks the gradation. At the same time, though thus differing in physical beauty, the half-castes of the three groups possess an equal capacity for civilisation and a corresponding development of intellectuality.

The Tongan women are more prolific than the Fijian women, and the Samoan more prolific than the Tongan, when married to whitemen.

All the half-castes of the three groups are as subject to the local indigenous diseases as are the pure natives. There is a disease called “coko” (thoko) in Fiji, “tona” in Samoa and Tonga, which attacks the native children almost without exception. While the children of foreign residents are wholly free from it, the half-castes are just as subject to it as the pure natives. Where scrofula exists in the

mother's family, it invariably appears in the half-caste offspring. Those half-caste children only escape, in either case, who are wholly removed from intercourse with the maternal race and who are restricted to European diet.

The PRESIDENT proposed the thanks of the meeting to Mr. Pritchard, for his very careful and suggestive paper.

Dr. SEEMANN said he agreed with Mr. Pritchard in everything he stated. The chiefs were a very remarkable race. They might be considered the most genuine aristocracy existing in the world; for they were both physically and intellectually superior to the other natives. If any of the tribe wanted to do anything, they went to the chief, who excels in everything and gives his advice and his assistance to all who apply to him. In this manner, the chiefs kept up their superiority over the people. There is little in their dress to distinguish them; but they maintain their position solely by their superior qualifications. The priests are inferior to the chiefs, but they act together, and there is, indeed, a complete union between church and state. Of course it is very difficult for the missionaries, under such circumstances, to effect a change in them; hence it is that they consider the priests to be stupid. Nevertheless, in the Fiji Islands the priests sometimes find it to their advantage ultimately to go over to Christianity, and to become missionaries themselves. They cannot, however, forget their former practices, and when excited they sometimes go through the whole of their old antics. The superior beauty of the Tongan women to those in Fiji is very striking. Among the latter, the women are made to do all kinds of hard work; but in the Tongan Islands they are treated more as women are treated in England. He had little doubt, from the progress that the Fiji Islanders have made, that they will ultimately become a civilised people. A planter, whom he knew there, employed from two hundred to three hundred of the natives on his plantation; and some of them will even use a spade, to which the natives have generally a great dislike. The native missionaries endeavour closely to imitate the missionaries from Europe, and they do this with so much exactness that it appears to be mimicry, and is very laughable. The priests, he said, are generally related to the chiefs. He expressed the hope that the Society would have more papers from Mr. Pritchard, who had been so long in Polynesia as to have become intimately acquainted with the manners and customs of those people. Dr. Seemann added, in reply to a question from Mr. Chambers, that the native priests of the Fijis have certain mysteries and profess to be oracles, and that before the chiefs go on any expeditions they consult the priests.

Mr. MACKENZIE remarked, respecting the oracular utterances of the priests of the Tongans, that he understood that in one of the westerly islands there was a cavern which was visited by the priests for the purpose of consulting a divinity supposed to reside there, and they looked down a well for certain signs they expected to perceive. At that time the Tongans were at war with the Fijis, though now they are all in amicable relations.

Dr. SEEMANN observed that the Fiji islanders believe in the immortality of the soul, and they expect to live in the next world the same kind of life that they do here. They entertain the notion that everything, inanimate as well as animate, animals, and trees, and canoes, houses, hatchets, hammers, etc., has a soul.

Mr. REDDIE said he had listened with great pleasure to the paper, and he regretted that the author was not present to give still further particulars respecting that singular people, especially as to their physique and intellect. It was stated that there was a great difference between the inhabitants of the shore and those inland, the latter being represented to be very inferior. That state of things presented a remarkable contrast to what was found to be the case in Africa, where generally the natives in the interior were superior to those on the coast. It would be interesting to find out why the two cases should be different. It had been said that those on the shore laboured less, as their food could be more easily obtained; but it had been customary to suppose that the necessity for labour assisted intellectual development. He suggested that one cause might perhaps be the unhealthiness of the climate on the African shore, while in the Viti Islands the contrary might be the case, and the interior be more unhealthy than the coast. As to the cranial development of the people under the influence of Christianity and civilisation, he regretted that Mr. Bendyshe and Mr. Higgins were not present to hear that assertion; for they appeared to have adopted the opinion of Vogt, who had sneeringly referred to certain skulls of low development as "Apostle-heads." It was evident, from Mr. Pritchard's paper, that in those islands the propagation of Christianity had improved the form of the heads of the natives. It is a remarkable fact if, in the course of even a generation or two, Christianity has produced the marked effects described by the author of the paper. He should like to have heard whether the chiefs and priests are hereditary. He fancied that the superior physical development of the chiefs was the original cause of their occupying that position, and not the effect of it. In the case, for instance, of a chief being physically or intellectually degraded, would he maintain his position, or would not another man take his place?

Mr. MACKENZIE made some further allusion to the superstition existing in a certain group of islanders respecting wells, and their belief that Paradise is to be found at the bottom of a well.

Mr. DIBLEY, referring to that part of the paper respecting superior cranial development having been produced by teaching, he said it might be considered an indication that all races of mankind are susceptible of such changes in circumstances. The Negroes in America might be adduced as an instance. Those who resided in towns and were surrounded by civilising influences were superior in physical appearance to those in the plantations; the original thick lip of the Negro becomes thinner, and their noses more aquiline. Even among ourselves we see similar influences produce like effects. In the assertion of the writer of the paper, there might be seen the indication of a great truth—that the physical and intellectual capacities of man

could be developed into a higher order of being if circumstances permitted.

Mr. CARTER BLAKE said that, as to the question which had been raised by Messrs. Reddie and Dibley, whether the state of civilisation had any effect on cerebral capacity, he was in favour of the opinion expressed by Mr. Pritchard. He referred, in confirmation of that opinion, to the results of the examination by M. Broca of the forms of skulls in the cemeteries of the *Tribunal de Commerce*, *Cimetière des Innocents*, and *Cimetière de l'Orient*, at Paris, where they were clearly divided into three distinct periods. The oldest series of skulls consisted of those of the Carlovingian period, and they were of a lower character than those in the second series of skulls of individuals of the twelfth and thirteenth centuries; and the third series of skulls, which were of the earlier part of the last century, were still better developed. He saw no reason to doubt the doctrine that a greater amount of civilisation may produce a larger brain. As to the alleged "Apostle skulls" in Switzerland, which had been referred to, the statement on that subject showed how small an amount of fact sometimes serves for the foundation of a wide surmise. Certain skulls, as for example, the Hohberg skull, were found having a lower development than usual, but not essentially different from those existing in Switzerland. M. Vogt found these skulls slightly more apish, and suggested that they might be those of the men who introduced Christianity into Switzerland at an early period of history; and that gave him an opportunity, which of course he did not lose, to have a fling at certain doctrines. Professor Vogt admitted that the "simian" Apostle skulls belonged to a race whose representatives preserved their type down to this day; at the same time, he assigned to them an intermediate place between the skulls of Engis and Neanderthal, so called extinct types of human crania. Now, if either of Professor Vogt's theories was true, the converse one was erroneous; and Mr. Blake left the task to others to endeavour to extract the minimum of sense there might be in Professor Vogt's statement. The whole case was but one link in a chain of argument; and, in opposition to Professor Vogt, Mr. Blake thought that the skulls did not indicate migration from a foreign land, but that they were those of the original long-headed (so-called) Celtic population of Switzerland. The theory of the Apostle-heads afforded a curious example of the structure of hypothesis on a single fact, inaccurately observed, and illogically argued upon.

Mr. NASH said it appeared that M. Vogt had from a single fact derived wrong deductions; but when Mr. Carter Blake adduced Broca and the three series of skulls, it appeared that from that assemblage of facts there had been very wrong deductions. It was said that the skulls of the Carlovingian race were less developed than those in the middle series, and that the latter were less developed than the third. But he would ask, who were the people buried during the Carlovingian period? Could it be supposed that those who founded the Carlovingian empire would have a low form of skull? Such a kind of skull was more likely to be found among those who succeeded them, and

whose remains were deposited in the second stratum; and it might be expected that the third stratum would exhibit an improvement. So that as far as Broca's assertions were concerned, they could not receive his opinion of the subject, and it showed how little is really known about the matter. He thought that no reliance should be placed on Mr. Pritchard's opinions respecting the alteration in the form of the head by civilisation. He considered the only influence likely to produce a change was the infusion of new blood. He did not believe in the effects of education in altering the form of the skull. If an improvement in the character of the skull were produced by education, and the people were to relapse into their previous state, the form of the skull, it must be supposed, would resume its low character. The effect produced by the infusion of different blood is different. A mixture of races elevates the character of the lower races permanently; as might be said of the ancient people of this country.

The PRESIDENT said he was somewhat astonished at the form the discussion had taken. He could scarcely have expected, from the nature of the paper, that it could have led into a discussion as to the merits of Vogt, and on the origin of the term "Apostle skulls." It was not necessary in discussing such a paper to go into those subjects. The paper contained so many other facts of interest that he should confine himself to them. It exhibited a very careful observation of facts; but, at the same time, some of the opinions expressed were very speculative, and if the paper were allowed to pass without comment it might be dangerous to the progress of their science. Mr. Nash had very properly said it exhibited too much of an off hand manner of treatment of important problems; and, though the observations were made with care, it must be borne in mind, that the opinions expressed were not formed until the author had returned to this country; and that the facts contained in the work of Dr. Waitz, translated and published by this Society, had induced him to write the paper. As to the size of the skull of the priests, it appeared that they were the last to embrace Christianity; therefore, it might be assumed, that they were more stupid than the rest; and, so far, the larger size of their skulls was opposed to the opinion of M. Vogt. Mr. Reddie wanted to know the reason why these skulls were better developed; but they were told that the priests were always scheming to maintain their authority, and that this exercise of the mind had improved the form of these skulls. Then, again, they were told that the cranial development of the children improved under the influence of civilisation with each generation, and that in the third generation the metamorphosis would be positive and unquestionable. He, however, disputed that opinion, as at present informed. He agreed with Mr. Pritchard with regard to the faculty of the natives for imitation, which was common, however, among all savage nations. The offspring of natives of different groups were said to be more active and hardy than the offspring of natives of any one group; and the same fact is even observed among ourselves. Then, again, as to the half-castes: the superiority of the offspring to their mothers, the preponderance of the paternal race in the developments of the children; and the fact that half-castes

when they intermarry are less prolific, are all important matters for consideration; but it must not be too hastily assumed that they are really facts, without further observation. The paper was no doubt valuable and interesting, and he hoped that Mr. Pritchard would contribute others on the same subject and be present when they were read to make further observations personally.

Dr. SEEMANN undertook to reply to some of the observations that had been made on the paper, which Mr. Pritchard had written at his request. He said he could confirm by his own observation the curious fact that the natives on the coast are a finer set of men than those in the interior. He ascribed it to the food on the coast being more abundant, and the people better fed; for there they had an abundant supply of cocoa-nut and fish. He, indeed, ascribed a great deal to the effect of difference of food. The Esquimaux, for example, were very different in different parts of America. In the west, where food was plentiful, they were tall and strong, many of them being six feet high; while in the east, where food was scarce, they were very diminutive. He thought there could be little doubt that mental culture produces great influence on the physical appearance of people, and that principally was what Mr. Pritchard meant to say. He did not agree with him in his remarks on the half-castes. With respect to the question whether the offices of priests and chiefs were hereditary, he observed that they are strictly so; but that when a man becomes distinguished by any act of daring or otherwise, he is allowed to marry a chief's daughter. In such a case, however, he himself cannot rise to the dignity of a chief, but his children may.

The thanks of the meeting were then given to the author of the paper and to Dr. Seemann for having induced him to contribute it, and for the explanations he had given.

The following paper was then read:—

*Notes on Further Remains from Keiss, near Wick.* By JOHN ANDERSON, Esq. (Communicated by GEO. E. ROBERTS, Esq., F.G.S., Hon. Sec. A.S.L.) With a Note on the Human Skull, by C. CARTER BLAKE, Esq., F.G.S.

*Notes on the Weapons.* Nos. 1 to 7 inclusive, are the contents of a kist from the "burial mound" (described by Mr. Laing) at Stain, near Keiss. The kist differed in no way from those previously opened. It was rudely formed of beach stones placed on edge and covered over, from four to six stones forming the length of the grave. The body had been laid, as in the others, on the sandy bottom. The sand was wet, however, and the skull would not lift. The weapons, etc., are two small spear-heads, two arrow-heads, a small hatchet-shaped piece of quartz, a deer-horn handle, and an oblong stone worn at both ends by use as a hammer or pestle. Both the spear-heads are rubbed or scraped to shape, the arrow-heads are only rudely chipped, and the quartz cutting instrument is fashioned solely by chipping. The finest spear-head, from its appearance at the helve, seems to have been inserted into a socket on the shaft. In the shell-